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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Juil Lee

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EXAMINER

LEE, NICHOLAS J

ART UNIT

PAPER NUMBER

2627

MAIL DATE

DELIVERY MODE

11/30/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/599,862	Applicant(s) LEE ET AL.	
	Examiner NICHOLAS LEE	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Pub. 2004/0145995 A1 to Saito et al ("Saito") in view of applicant's admitted prior art, and further in view of US Patent No. 5,620,068 to Garnjost et al ("Garnjost").

As to claim 1, Saito discloses a device for near field optical recording, information being represented by marks in a track on a record carrier (Fig. 14a, 20), the device comprising:

a head including a lens (105) to be positioned by a lens actuator at a near field distance from a surface of the record carrier for generating a scanning spot on the track, and

an air gap controller (21) for controlling an air gap between the lens and the surface.

Saito fails to disclose an air gap controller in an approach mode for bringing the lens from a remote distance to the near field distance by providing an increasing periodical excitation signal to the lens actuator for generating a sequence of approach instants at which the lens approaches the surface, the

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lens at the approach instants having substantially zero velocity in a direction perpendicular to the surface, and the sequence of approach instants bringing the lens subsequently closer to the surface, and

switching the air gap controller to a closed loop mode when the lens is within the near field distance at one of the approach instants.

The applicant's admitted prior art teaches an air gap controller controls the movement of a head in a pull-in procedure to move the head from a remote starting position to a near-field position (§ 0003).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to have modified Saito with the teachings of the applicant's admitted prior art with the motivation of using an approach procedure of the applicant's admitted prior art to bring a head within a near field distance required for setup.

Saito in view of the applicant's admitted prior art fails to disclose providing an increasing periodical excitation signal to the lens actuator for generating a sequence of approach instants at which the lens approaches the surface, the lens at the approach instants having substantially zero velocity in a direction perpendicular to the surface.

Garnjost discloses an method of controlling an actuator wherein a signal of increased amplitude (Fig. 4, Fig. 5) is used for a continuous adjustment for tuning a device. Garnjost further discloses a closed loop wherein a periodic

sinusoidal increases in amplitude (Fig. 5) so as to avoid any external disturbance (col. 11, lines 35-50).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to have modified Saito as modified by Garnjost to use a method of controlling an actuator for applying a increasing excitation signal for tuning or adjusting the head of Saito to bring the head from a remote distance to a near field distance.

As to claim 2, the same rejection or discussion is used as in the rejection of claim 1. Saito as modified discloses the device as claimed in claim 1, wherein the increasing periodical excitation signal comprises a sinusoidal signal (Garnjost, Fig. 5).

As to claim 3, the same rejection or discussion is used as in the rejection of claim 1. Saito as modified discloses the device as claimed in claim 1, wherein the increasing periodical excitation signal comprises a periodical signal of increasing amplitude (Garnjost, Fig. 5).

As to claim 6, the same rejection or discussion is used as in the rejection of claim 1. Saito as modified discloses the device as claimed in claim 1, wherein the air gap controller comprises a reference generator for, in a hand-over mode, providing a reference near field distance changing from a first target near field distance to a second, lower target near field distance via a transfer function ($\frac{1}{s^2 + 2\zeta\omega_n s + \omega_n^2}$ 0107-0110). Saito monitors the gap by monitoring a gap error signal which corresponds to the distance between a lens and the medium wherein a gap

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control signal is generated. It would be obvious that a transfer function would be used in a generation of a control signal corresponding to the referenced distance between the lens and the surface of the medium.

As to claim 7, the same rejection or discussion is used as in the rejection of claim 6. Saito as modified discloses the device as claimed in claim 6, wherein the reference generator is for providing reference values to a controller unit based on a two degree of freedom control technique in said hand-over mode. Garnjost further discloses a method wherein a time response is compared during the adjustments of the actuator corresponding to the applied amplitude signal (col. 11, lines 4-15).

As to claim 8, the same rejection or discussion is used as in the rejection of claim 1.

As to claim 9, the same rejections or discussions are used as in the rejections of claims 3 and 8.

3. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Pub. 2004/0145995 A1 to Saito et al ("Saito") in view of applicant's admitted prior art, and further in view of US Patent No. 5,760,992 to Phan et al ("Phan").

As to claims 4 and 5, the same rejection or discussion is used as in the rejection of claim 1. Saito as modified fails to disclose the device as claimed in claim 1, wherein the increasing periodical excitation signal comprises a ramp component.

Phan discloses a control module operable to move the lens by increasing the excitation of the signal that comprises a ramp component (Fig. 10; col. 20, line 65-col. 21, line 30).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to have modified Saito as modified with the teachings of Phan to accurately control the positioning of the head from a remote distance to a near field distance.

As to claim 5, the same rejection or discussion is used as in the rejection of claim 1. Saito as modified discloses the device as claimed in claim 1, wherein the increasing periodical excitation signal comprises a low-pass filtered staircase component (Fig. 10).

Response to Arguments

4. Applicant's arguments, see pg. 5-6, filed 8/13/2009, with respect to the rejection(s) of claim(s) 1-9 under 35 USC § 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Saito in view of applicant's admitted prior art and so on. See the rejections above.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICHOLAS LEE whose telephone number is (571)270-7354. The examiner can normally be reached on Monday-Friday 7:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on 571-272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NICHOLAS LEE/
Examiner, Art Unit 2627

/Joseph H. Feild/
Supervisory Patent Examiner, Art Unit 2627